

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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| Applicant: | James Stoffer et al. | Examiner: | Vickey Ronesi |
| Serial No.: | 10/758,972 | Group Art Unit: | 1714 |
| Filed: | January 16, 2004 | Docket No.: | 2416.003US1 |
| Title: | CORROSION RESISTANT COATINGS | | |

PRE-APPEAL BRIEF REQUEST FOR REVIEW

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In response to the Final Office Action mailed August 14, 2007 (hereinafter "Final Office Action"), Appellant respectfully requests pre-appeal review of the rejections in the above-identified application. No amendments are submitted with this request, which is being filed with a Notice of Appeal.

The review is requested because the cited references fail to establish all elements recited in Appellant's claims and *prima facie* obviousness has not been established for at least the reasons set forth below. Therefore, Appellant respectfully submits that the only logical conclusion is that the present claims are found to be patentable over the cited references.

1. *Claims 1, 7, 10, 11, 13, 14, 17, 19, 56-58, 141, 143-145 and 164-166:*

Claims 1, 7, 10, 11, 13, 14, 17, 19, 56-58, 141, 143-145 and 164-166 were rejected under 35 USC § 102(b) as being anticipated by Takeuchi et al. (JP 05-117589) (hereinafter "Takeuchi"). Appellant respectfully traverses on the ground that Takeuchi fails to recite each element of the claims.

Appellant's independent claims 1 and 56 recite the inclusion of "one or more organic binders." Appellant cannot find in Takeuchi any recitation to organic binders, as claimed. Rather, Takeuchi recites "resins of the coating material that forms the heat resistant coating are polyborosiloxane resin, polycarbosilane resin, polysilastyrene resin, polytitanocarbosilane resin, and polysilazane resin, and these polymers that have silane, titanium, boron and the like metal elements in the main chains."¹ Appellant explicitly states that "organic binders have a carbon

¹ Takeuchi at [008].

backbone.”² Because Takeuchi does not recite the use of organic binders, as recited in Appellant’s claims 1 and 56, Takeuchi does not anticipate claims 1 and 56.³

2. *Claims 2, 3, 67, 68 and 150:*

Claims 2, 3, 67, 68 and 150 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Takeuchi et al. (JP 05-117589). Appellant respectfully requests reversal of this rejection on the ground that there is no *prima facie* case of obviousness.

In the Office Action, mailed 10/19/2006 (referred hereafter as Paper 1), the Examiner explicitly states that the reference does not disclose all elements of the rejected claims⁴. As the Examiner failed to take Official Notice of the missing elements or provide further references, a *prima facie* case of obviousness was never established.

In addition, the Examiner argues in the Final Office Action that the MPEP states that a reference that clearly names a claimed species anticipates that species no matter how many additional species are named⁵. Although speaking of obviousness and not anticipation, the Examiner fails to consider case law that states the invention must be disclosed in the same detail and arrangement as in the claim and not in isolation.⁶ Takeuchi discloses a list of inorganic fillers including a rare earth compound and a praseodymium oxide, but the list also includes coloring pigments and other compounds⁷. The reference does not disclose a mixture of one or more rare earth compounds and a praseodymium oxide in combination with a binder, as disclosed in the present claims, and thus a *prima facie* case of obviousness has not been established.

² Specification, page 7, paragraph [0021]

³ According to the Federal Circuit, “[a]nticipation requires the disclosure in a single prior art reference of each element of the claim under consideration.” *W.L. Gore & Assocs. v. Garlock, Inc.*, 721 F.2d 1540, 200 USPQ 303, 313 (Fed. Cir. 1983).

⁴ Paper 1 at page 5, “Takeuchi et al does not explicitly disclose mixture of two rare earth compounds or a dispersant.”

⁵ Final Office Action, page 7

⁶ It is not enough, however, that the prior art reference discloses all the claimed elements in isolation. Rather, “[a]nticipation requires the presence in a single prior reference disclosure of each and every element of the claimed invention, *arranged as in the claim*.” *Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 730 F.2d 1452, 221 USPQ 481, 485 (Fed. Cir. 1984) (citing *Connell v. Sears, Roebuck & Co.*, 722 F.2d 1542, 220 USPQ 193 (Fed. Cir. 1983)) (emphasis added). “The identical invention must be shown in as complete detail as is contained in the ... claim.” *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989); MPEP § 2131 (emphasis added).

⁷ Takeuchi at [009].

3. *Claims 1-8, 10-20, 30, 31, 56-59, 61, 62, 67-69, 139, 141, 143-145, 147-150, 164-168 and 184:*

Claims 1-8, 10-20, 30, 31, 56-59, 61, 62, 67-69, 139, 141, 143-145, 147-150, 164-168 and 184 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Shoji et al. (U.S. Patent No. 6,190,780) (hereinafter "Shoji"). Appellant respectfully requests reversal of this rejection on the ground that there is no *prima facie* case of obviousness.

Claim 1:

Appellant's claim 1 recites a composition including "one or more organic binders; and solid components comprising a praseodymium oxide selected from the group consisting of oxides, mixed oxides, solid solution oxides, hydrated oxides, hydroxides and combinations thereof, wherein the praseodymium oxide comprises about 1wt% to about 90wt% of the solid components." Shoji does not describe a composition of about 1wt% to about 90wt% praseodymium oxide and an organic binder. Shoji describes the use of a reaction product between an oxyacid and a rare earth compound. There is no motivation or suggestion to use about 1% to about 90% praseodymium oxide in combination with an organic binder. Shoji teaches away from the combination in that its corrosion coating requires the use of an oxyacid rare earth compound. Rare earth oxides are not the same as a reaction product between an oxyacid and a rare earth compound. Shoji describes conversion treatment films that are known in the art as produced by a metal chemically reacting with an acid or base and the metal substrate chemically dissolving. There is an electron exchange and the corrosion inhibition material in the solution precipitates onto the metal substrate. This is accomplished by the aluminum (or other metal) dissolving in the highly acidic phosphoric acid medium. In addition, Shoji describes heating at high temperatures in an acidic environment⁸. The embodiments of the present invention relate to paint-type applications at room temperature. Shoji teaches away from such a composition and application.⁹

Further, when mentioned, the Shoji reference instructs not to include more than 5 times the molar amount of a rare earth oxide as the rare earth oxyacid that is present, in a preferred

⁸ Shoji at col. 11, lines 19-33.

⁹ According to the Federal Circuit, a reference should be considered as a whole, and portions arguing against or teaching away from the claimed invention must be considered. (*See Bausch & Lomb, Inc. v. Barnes-Hind/Hydrocurve, Inc.*, 796 F.2d 443, 230 USPQ 416 (Fed. Cir. 1986).)

embodiment. This limitation teaches away from the higher content of praseodymium oxide possible as described in present Claim 1. Further, the Shoji reference describes coatings for an inorganic metal treatment and not for an organic coating.

Claim 35:

Shoji does not describe the combination of calcium sulfate or strontium sulfate with rare earth compounds and binders. Not only is calcium sulfate or strontium sulfate not found in the disclosure (not all elements are described), but there is no teaching of the use of such extenders to enhance the corrosion inhibiting abilities of the rare earth compounds and binders. Accordingly, the Final Office Action has not established a *prima facie* case of obviousness, and Shoji does not provide motivation to modify or combine to arrive at Appellant's invention.

Claim 121:

Claim 121 describes a method for preparing a coating composition in which a paint formulation is formed and an effective amount of a rare earth compound and one or more extenders, such as calcium sulfate and strontium sulfate, are added. Shoji does not describe the combination of calcium sulfate or strontium sulfate with rare earth compounds to form a coating composition.

Further, the methods of Shoji teach away from the present invention in that they require a high temperature reaction of rare earth compounds and phosphoric acid to produce a rare earth oxyacid as an active corrosion inhibitor. The methods of the present invention do not undergo heat treatment.

In addition to the specifically discussed claims above, the Shoji reference teaches away from the combinations of the present invention. Further, the reference provides no reasonable expectation of success. Shoji teaches that any solubility of the rare earth compound above 0.01 mol/l in the pH range of 5-8, and preferably pH 6-7, jeopardizes the coating's long-term corrosion resistance¹⁰. The reference further states that if the solubility crosses such threshold, the rare earth metal element compound will easily elute out from the film in moist environments such as rain and dew, thus lowering the long-term corrosion resistance in such moist environments. The embodiments of the present invention provide corrosion inhibiting compositions that can intentionally generate a local pH of about 4 to about 8. Any rare earth

¹⁰ Shoji at col. 12, lines 44-51.

compound would then be solubilized to enhance and optimize transport of the particular inhibitor species being used, from the composition to areas of exposed underlying substrate.

In the event that the Examiner would have established a *prima facie* case for obviousness, the embodiments of the present invention rebut such arguments by showing surprising and unexpected results. Table 3 of the Specification displays superior results using the combinations of the claim elements over the prior art.

4. *Claims 35, 39-52, 54, 55, 70, 121, 122, 132, 133, 151, 160, 161, 186 and 187:*

Claims 35, 39-52, 54, 55, 70, 121, 122, 132, 133, 151, 160, 161, 186 and 187 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Shoji et al. (U.S. Patent No. 6,190,780) in view of Reuter et al (U.S. Patent Application No. 2003/0082368)(hereinafter "Reuter"). Appellant respectfully requests reversal of this rejection on the ground that there is no *prima facie* case of obviousness. The arguments presented above are incorporated by reference in regard to Shoji. Reuter does not teach calcium sulfate or strontium sulfate as a corrosion inhibitor, but merely mentions calcium sulfate in a laundry list of inorganic fillers¹¹ that can be added to a colloiddally dispersed metallic bismuth corrosion package in a thermal curing.

CONCLUSION

For at least these reasons, Appellant respectfully submits that claims 1-8, 10-22, 30, 31, 35, 39-59, 61, 62, 67-70, 121, 122, 132, 133, 139, 141, 143-145, 147-151, 160, 161, 164-168, 184, 186, 187 and 191 are in condition for allowance, and notification to that effect is earnestly requested. The Examiner is invited and encouraged to telephone Appellant's attorney Benjamin Armitage at (612) 373-6920 to facilitate prosecution of this application. If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,
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Date

11/3/07

By

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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being filed using the USPTO's electronic filing system EFS-Web, and is addressed to: Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 13 day of November 2007.

Name

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Signature

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¹¹ Reuter at [0011].